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A COMBINED MAP AND PANORAMA FOR ORIENTATION FROM LOOKOUT STATIONS

By EMANUEL FRITZ
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[With separate illustration, Pl. XVIII, facing p. 502]

Of interest to geographers is a device combining a map and a panorama that has recently come into wide use in forest protection organizations as an adjunct to lookout stations in locating forest fires. It shows in a vivid manner the appearance of the entire stretch of country surrounding a lookout station just as it appears to the lookout man. Where a photograph would show the panorama as a flat rectangular picture, this device shows it just as it is—''bent'' around a central point.

Description of the Map and Panorama

Reference to the illustration (Pl. XVIII) shows the device to be circular —the original is 26 inches in diameter—the map occupying an inner circle 20 inches in diameter and the panorama the 3-inch annular space remaining between its outer edge and the outer limit of the drawing. For the map the proper portions of the standard topographic sheets published by the U. S. Geological Survey are used or, if these are not available, some suitable other map on the same scale. The panorama is the distinctive feature of the device. In a rough country the panorama as drawn will consist of a number of irregular lines, each representing a ridge or mountain crest. The lines farthest from the center indicate the farthermost ridges and mountains and the horizon. The name of each mountain or other conspicuous natural object is lettered below the line representing it. The space between two ridge lines naturally indicates a valley, and in such space is written the name of the stream occupying it. Objects of culture—railroads, settlements, mines, etc.—are also drawn in and labeled. The relief is not sketched in freehand but is carefully drawn with a special and ingenious but very simple alidade. With the aid of this instrument each ridge line drawn as part of the panorama bears its proper relation in size, position, and shape to those neighboring it. When such a device is ''set up'' on a lookout point and properly oriented, any one can learn from it the name of each feature lying in his view by sighting across its center at the actual feature, then picking out the line on the panorama portion corresponding to it in shape and position and reading its name. Knowing its name, more can be learned as to its location, surroundings, and character from the map in the center.

The Special Alidade

The alidade used in drawing the panorama portion is very simple (Fig. 1). It consists of a solid main bar having a pivot ten inches from one end on its under side. On one end of this bar is a fixed vertical arm and on the other a hinged inclined arm. Both arms are hollow and have within them solid bars, which can be made to move up or down by rack and pinion arrangements. The upper end of each bar projects from the tubular arm, the one in the vertical arm having near its outer end a small peep hole and the one in the inclined arm being fitted with an inverted-V gunsight. On

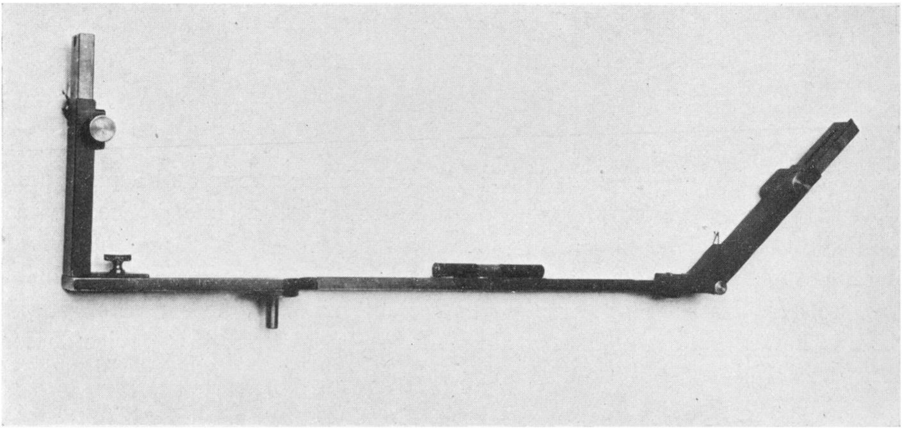


FIG. 1—Special alidade used for making circular panoramas. For description, see the text.

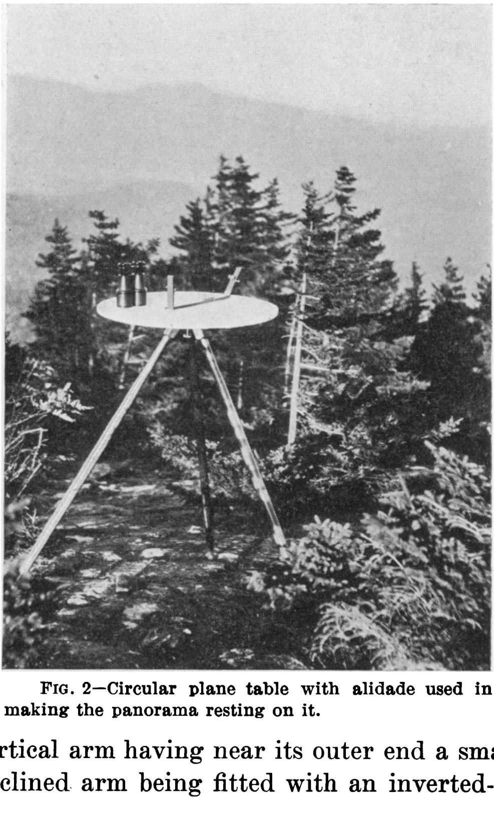
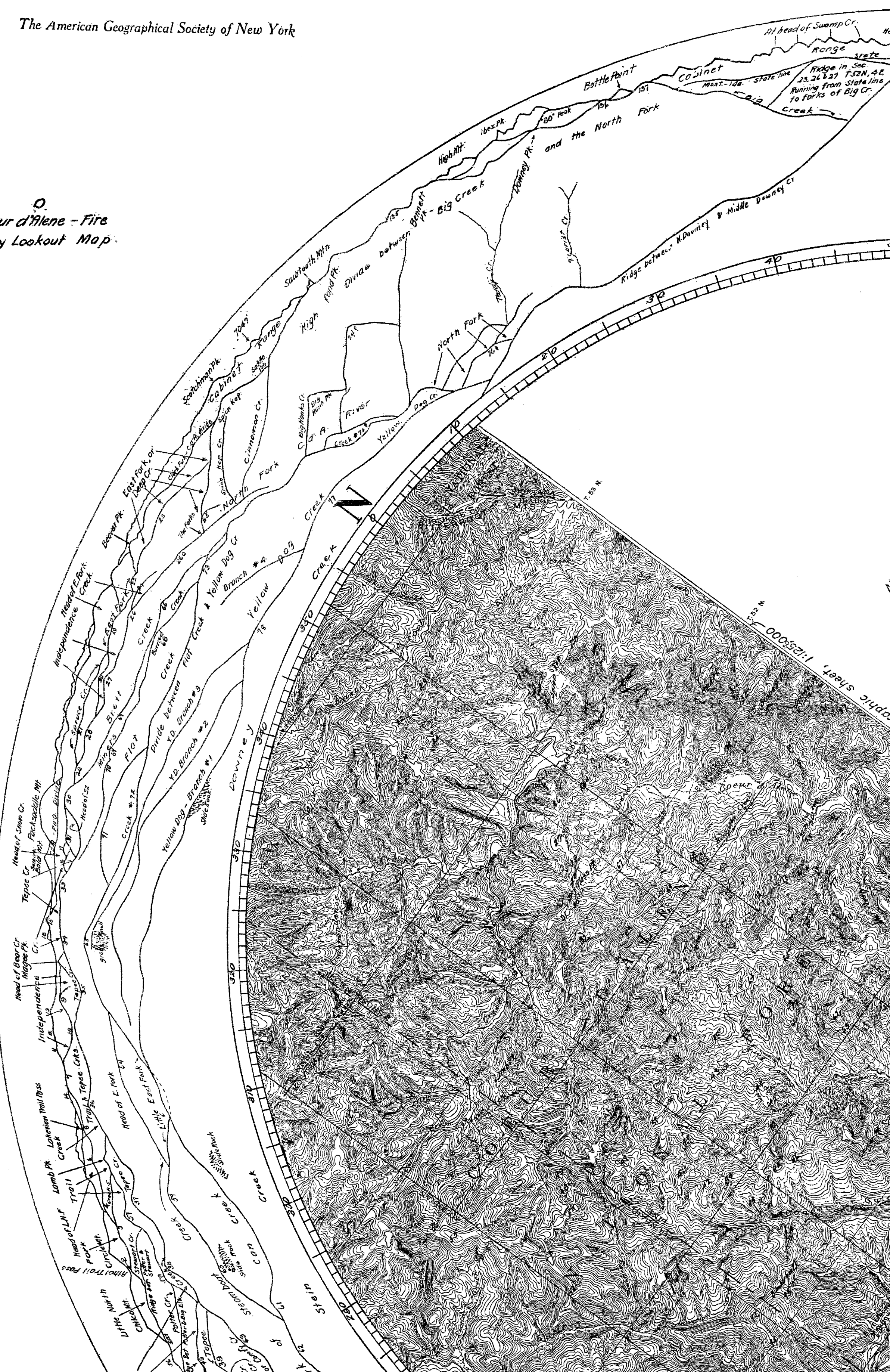
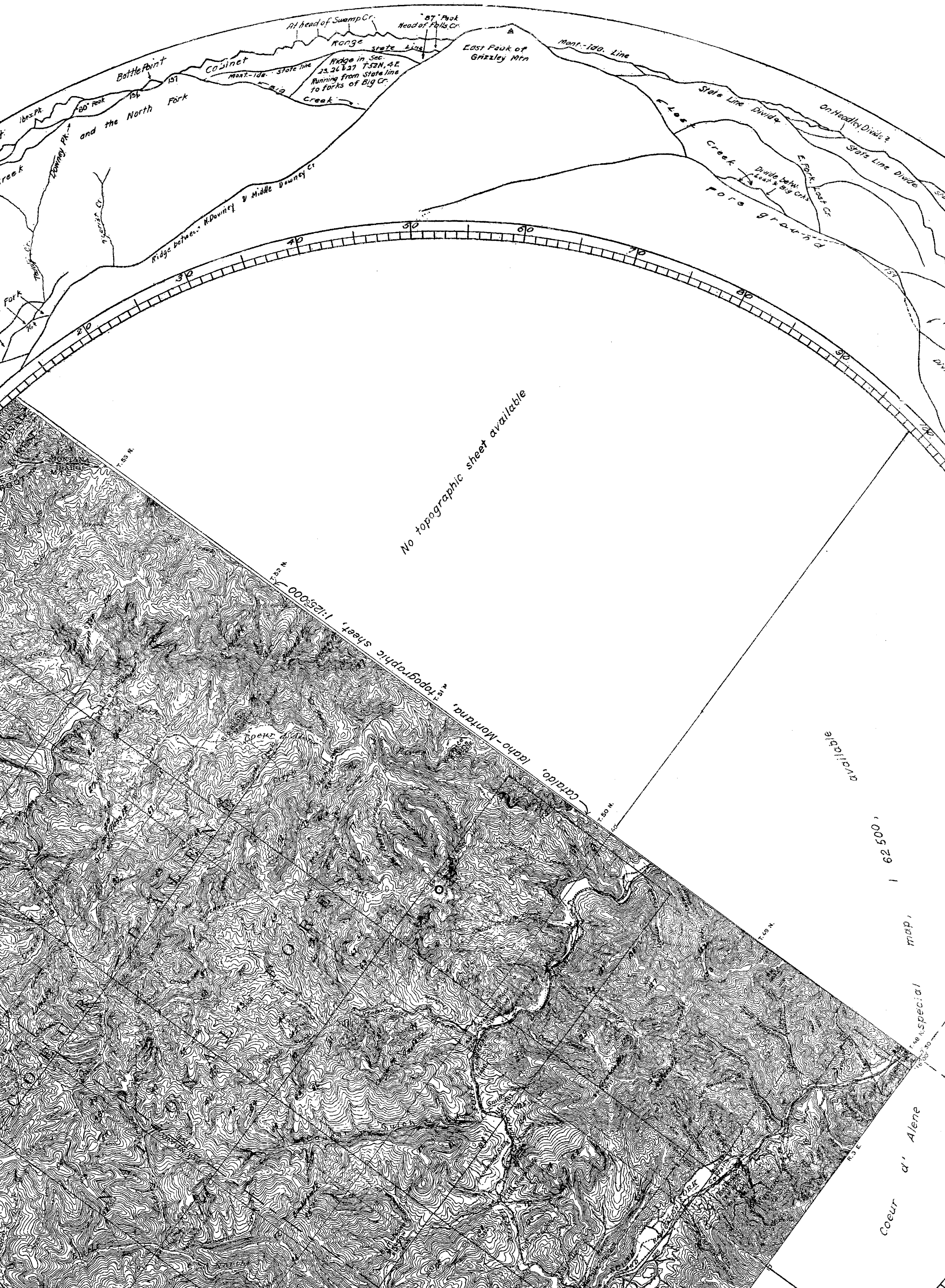


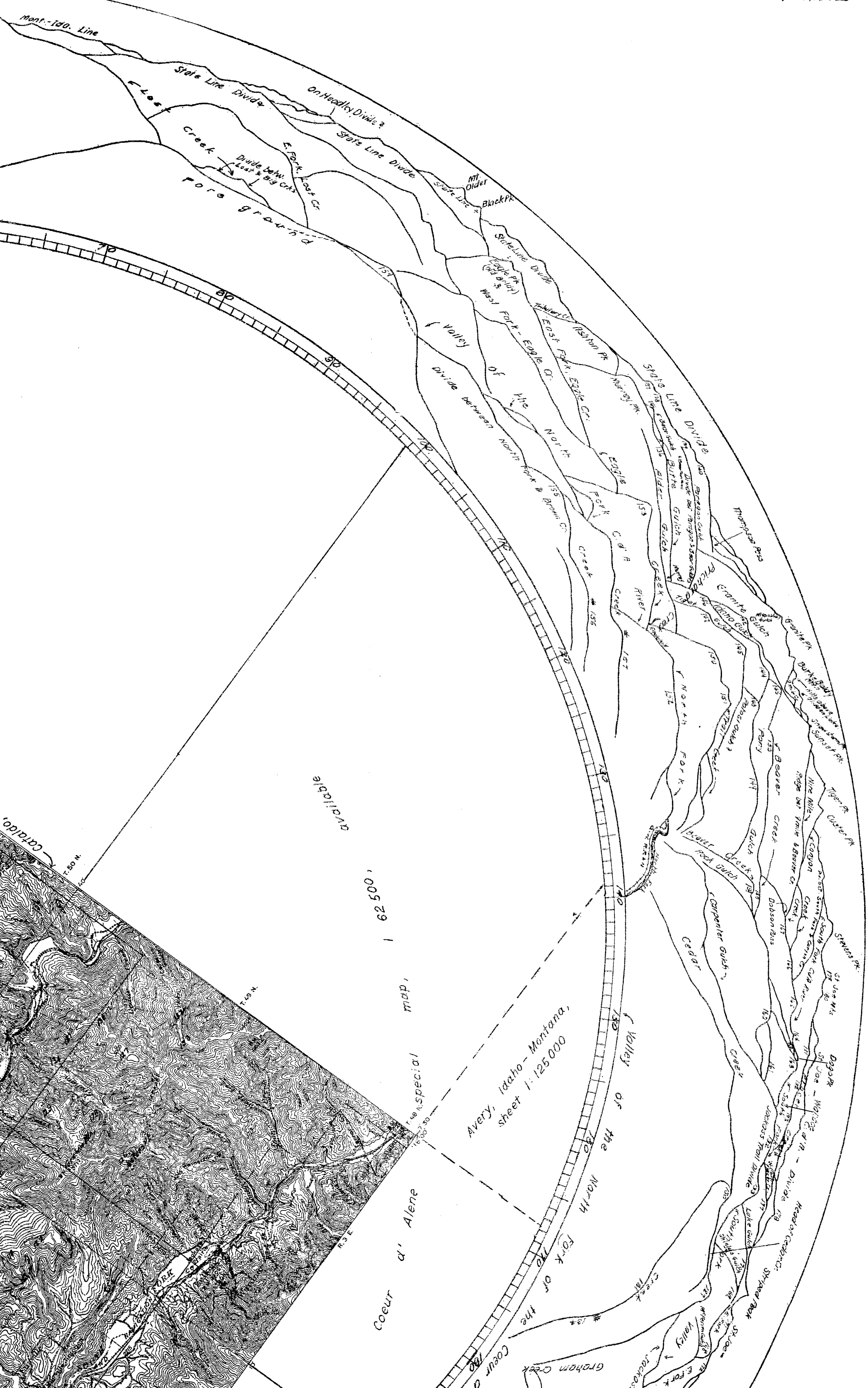
FIG. 2—Circular plane table with alidade used in making the panorama resting on it.

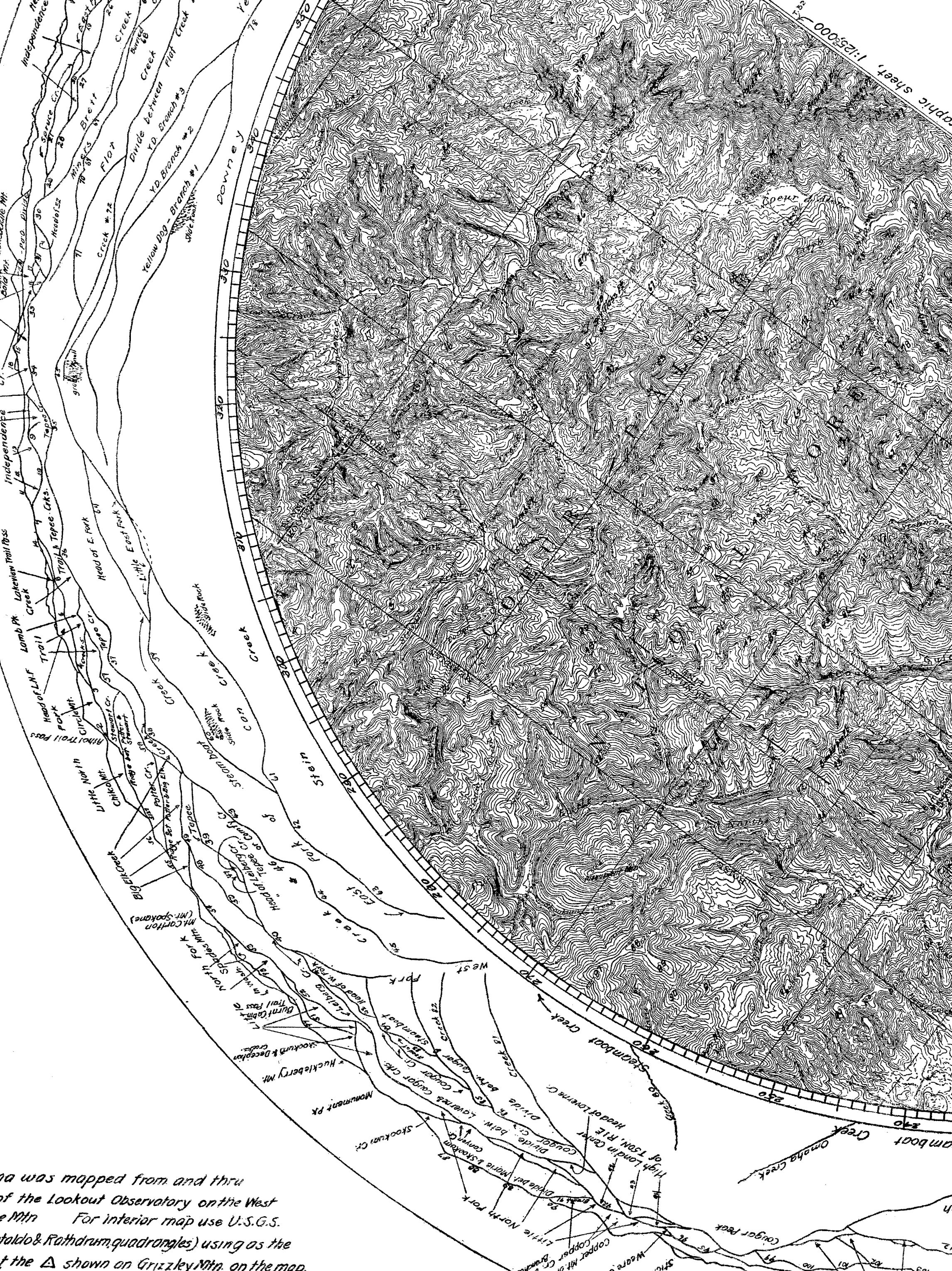
O.
Coeur d'Alene - Fire
Grizzley Lookout Map.



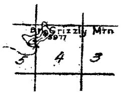

At head of Swamp Cr.
"87" Peak
Head of Falls Cr.
Range
State Line
Cabinet
Mont.-Ida. State line
Ridge in Sec. 23, 26 & 27 T.52N, 4E. Running from State line to forks of Big Cr.
East Peak of Grizzley Mtn
Mont.-Ida. Line
Bottle Point
137
136
"80" Peak
Ibex Pk.
Big Creek
Downey Pk.
and the North Fork
Creek
Lost Creek
State Line Divide
On Headley Divide ?
State Line Divide
E. Fork. Lost Cr.
Divide betw. Lost & Big Crks
Fore ground
Ridge between N. Downey & Middle Downey Cr.
Fork
20
30
40
50
60
70
80
90
100
No topographic sheet available
Cataldo, Idaho-Montana, topographic sheet, 1:125000
Coeur d'Alene
T.53 N.
T.52 N.
T.51 N.
T.50 N.
T.49 N.
T.48 N.
R.3 E.
Coeur d' Alene special map, 1 62500' available

The Geographical Review, Vol. VI, No. 6, 1918, Pl. XVIII





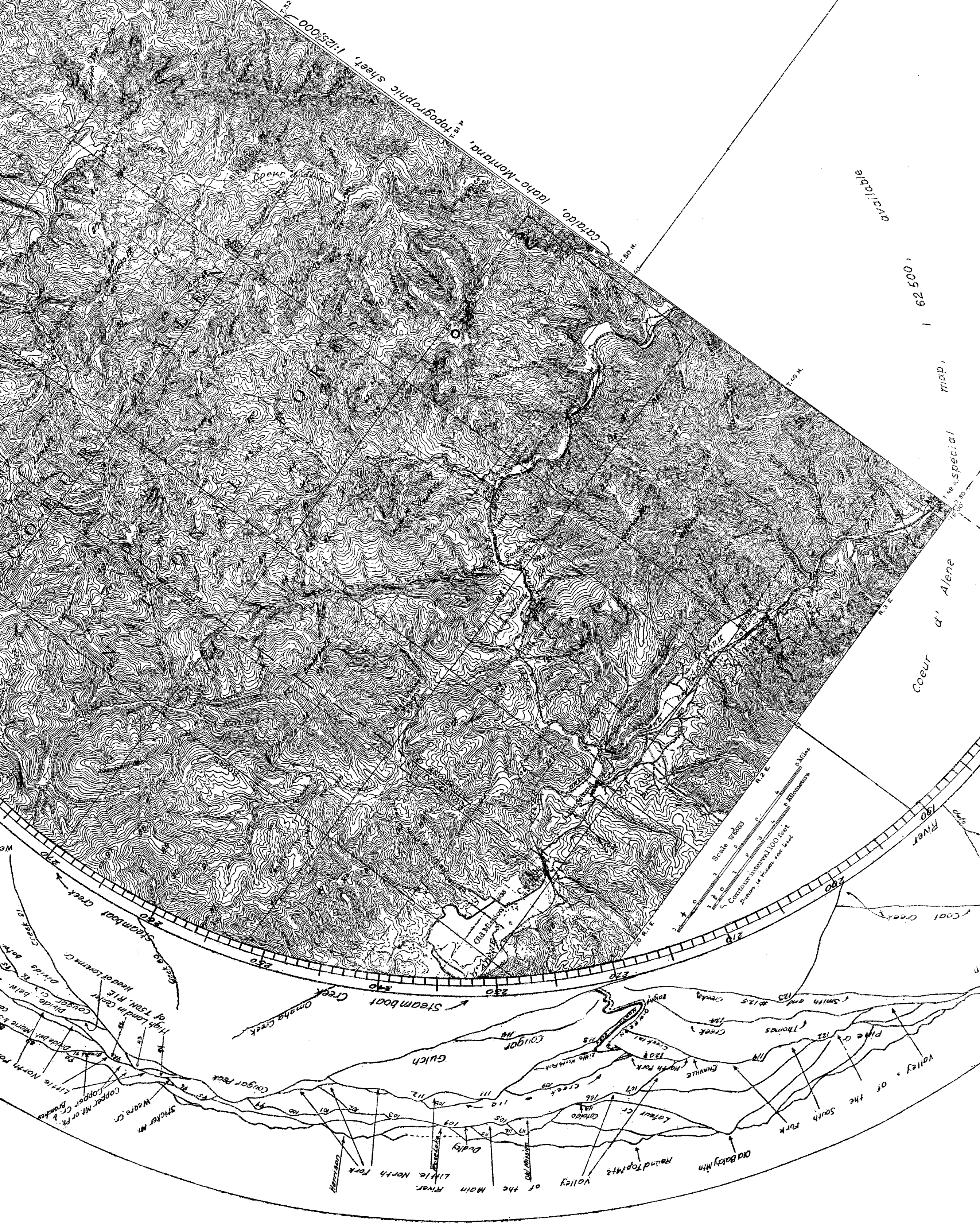
Panorama was mapped from and thru the glass of the Lookout Observatory on the West Peak of the Mtn For interior map use U.S.G.S. Sheets (Cataldo & Rathdrum quadrangles) using as the center not the Δ shown on Grizzly Mtn. on the map, but a point on the section line between Sects. 4 & 5, midway between the long lines of the highest Contour line, thus:-



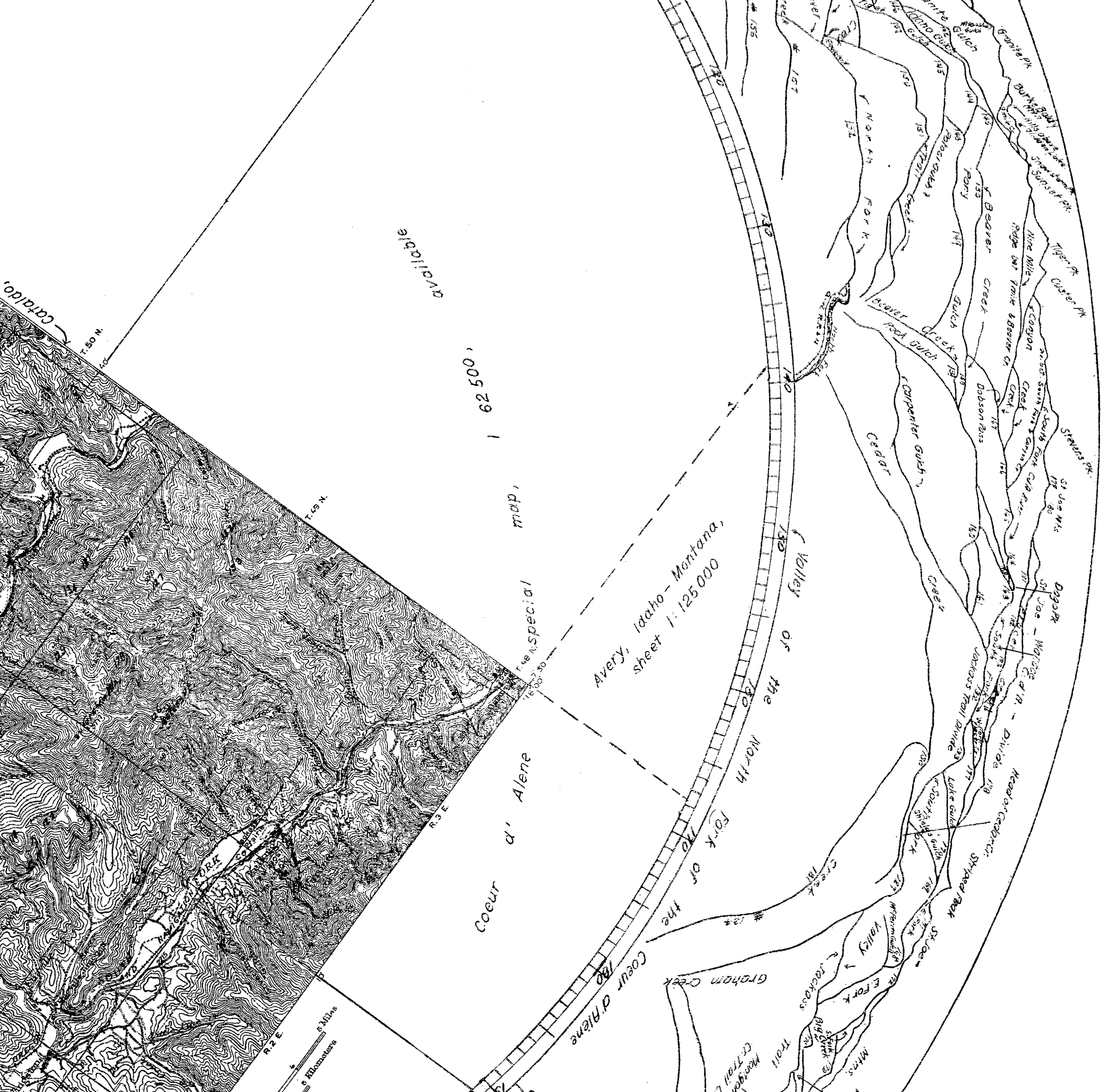
NOTE.
Before sending out copies of the completed map- including map for the interior circle, enter upon the interior map all names of streams, mtns, etc., and all numbers of those not named, as shown on the office copy or master "U.S.G.S. Sheets, filed with this tracing.

If corrections or additions are made, make record in upper-right corner, with date & initials

A COMBINED MAP
FOR ORIENTATION FR



A COMBINED MAP AND PANORAMA FOR ORIENTATION FROM LOOKOUT STATIONS



Field Work by Emanuel Fritz, Sept. 25-29-1915.
Office Work by " " " October. 1915.

Grizzley Mtn.

Coeur d'Alene National Forest, Idaho.

PANORAMA
OOKOUT STATIONS

the lower end of this latter bar is fixed a blunt pointed pricker which projects from the face of the hollow tube through a narrow slot. As the gunsight is raised or lowered the pricker therefore moves with it.

Making the Panorama

To make a panorama the alidade is placed on a leveled circular plane table and the pivot fitted into a small hole in the center of the table. After several simple adjustments are made the draftsman is ready to start mapping or drawing the panorama. He sights through the peep hole (after once being adjusted the bar with the peep hole is fixed in one position throughout the mapping) at a point on the feature to be drawn, then raises or lowers the gunsight on the inclined or front arm until it comes into the line of sight. This done, the arm is depressed on its hinge and a point is caused to be recorded on the paper by the small pricker. The arm is again raised, the alidade turned slightly on its pivot and a sight taken at another point on the same feature, and a point pricked on the paper. If the feature is a peak and the first sight was made at its top and the second at a point to the right or left of the top, the front sight must be lowered to bring it into the second line of sight. Thus the second point and succeeding points representing sights at successively lower places on the slopes of the peak are closer to the center of the map than the first representing the top of the peak. By joining all the points thus made an outline of the peak and its slopes will appear on the paper of the same proportion and shape as it looks to the observer. Other features are drawn in the same manner, and eventually all of them are sketched. The result is a circular panorama disposed about a center and corresponding with great fidelity in appearance and proportion to the actual. It only remains then to add the names of all features. This is done from the draftsman's knowledge as gained from familiarity with the region and from the study of existing standard maps.

Uses of the Device

As an aid in teaching a new lookout man the names and locations of all features lying in his view, thus greatly improving his accuracy in describing and reporting locations of forest fires, this type of combined map and panorama is unexcelled. In the state of New Hampshire, where many of the lookout stations for which such devices have been made are also popular points among campers and sightseers, the maps have excited the greatest interest and have added to the tourist's pleasure in making of the jumbled mass of mountains before him a well-ordered and definite series of distinctively named features that he can talk about and refer to by name.